

ABSTRACT

Disclosed are silica structure crack detection methods and apparatuses particularly useful in sol-gel fabrication processes. A wave signature of a crack in the silica structure is sensed to indicate that cracking has occurred. Sensing may be by active or passive techniques and may include contact and non-contact methods of monitoring. Further disclosed is a silica structure fabrication process development method wherein cracks are monitored by sensing a wave signature of a crack to isolate a process step or steps in which cracking has occurred. Process parameters are then adjusted in the isolated step to diminish or eliminate cracking.